

**FIBER OPTIC SENSORS WITH REDUCED NOISE****Abstract of the Disclosure**

Hollow-core photonic-bandgap fiber is used in fiber optic Sagnac interferometers, including but not limited to fiber optic gyroscopes. Use of the hollow-core photonic-bandgap fiber reduces Rayleigh backscattering and Kerr effects, which otherwise would introduce phase shift into light propagating through the optical fiber and result in errors in the output of the interferometer. Narrowband light sources, such as semiconductor lasers currently employed for telecommunication applications, which provide increased wavelength stability, as well as broadband light sources, can be used to drive the fiber optic interferometers. Modulation can also be employed to improve the accuracy of the output of these sensors.

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